

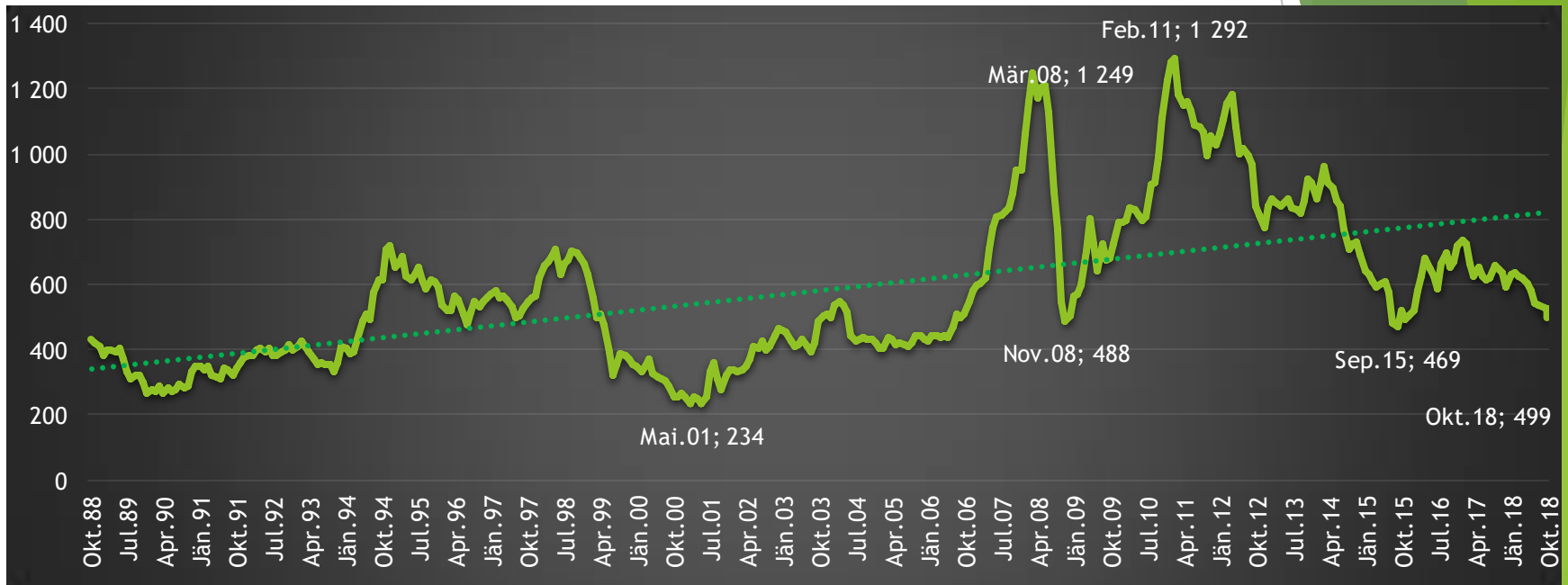
Palm Oil Industry in 2018 and Its Prospect in 2019

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Indonesian Palm Oil Association

Price of Palm Oil - USD per Metric Ton (Periods of October 1988-Oct 2018)



Price of palm oil hit the lowest level in 2018 due to the following factors;

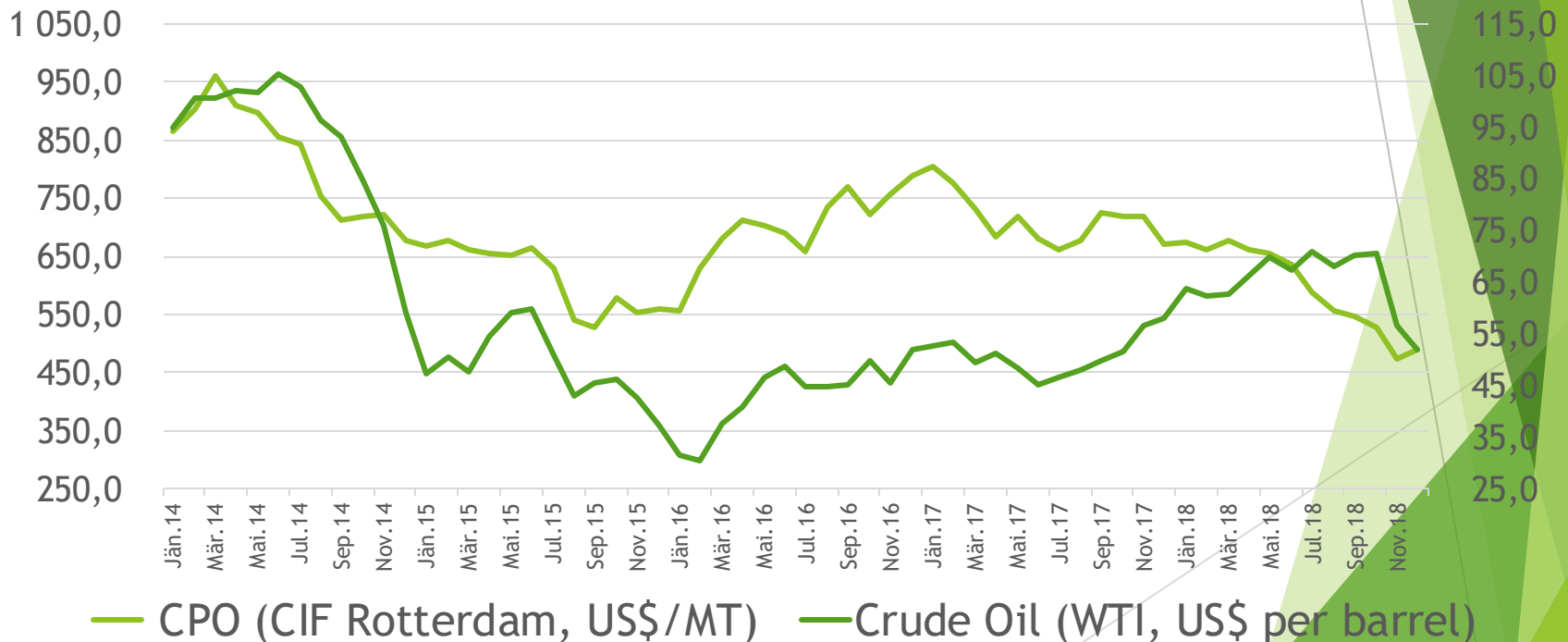
- Production is higher than expected, while demand is weak, thus stock is abundant.
- Crude oil prices declining.
- Protective policy by importing countries.
- An increase in soybean production and a decline in its price
- US-China trade war.

Price of CPO and Crude Oil (2014 - 2018)

Strong correlation between CPO and Crude Oil prices especially since 2007 as crude oil is substitute for biofuel CPO. Biofuel consumption is around 30% of total CPO consumption.

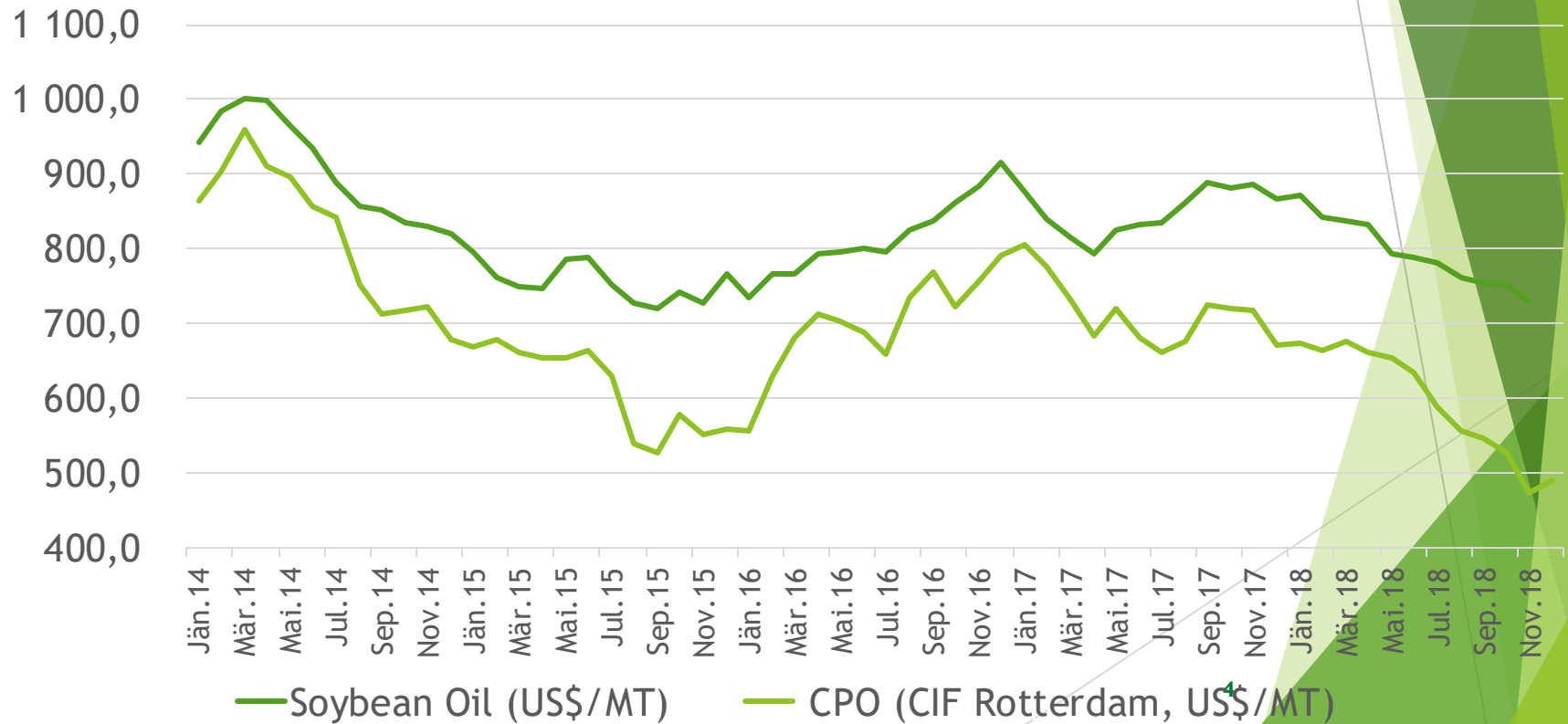
CPO

Crude Oil

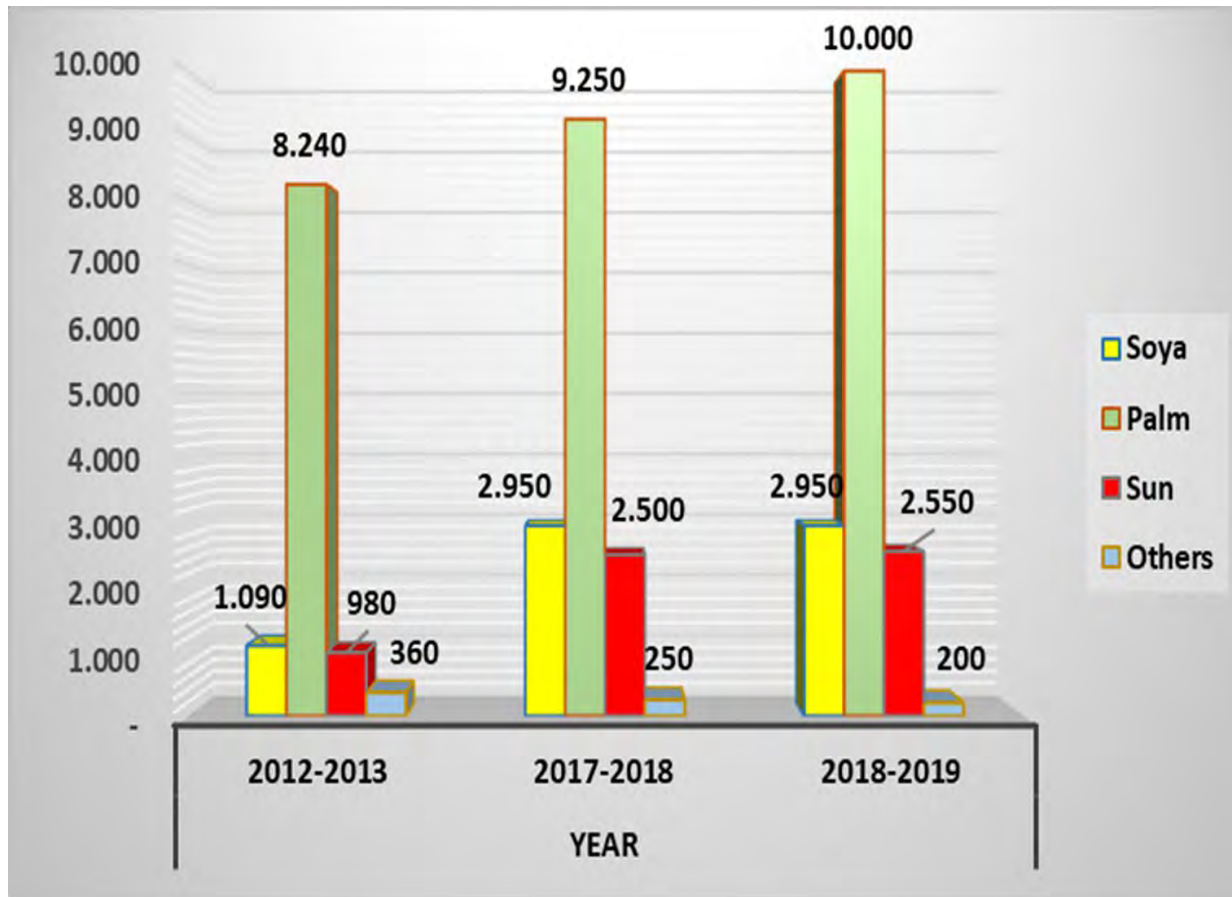


Price of Soybean Oil and Palm Oil (January 2014 - Nov 2018)

As substitute products, price of soybean and palm oil are close correlated. Price of soybean oil declined as a consequences of trade war US-China and an increase in production, thus price of palm oil also declining.



Indian imports of vegetable oils (000 tonnes)



India prioritize domestic vegetable oils by increasing its tariff imports to protect their farmers.

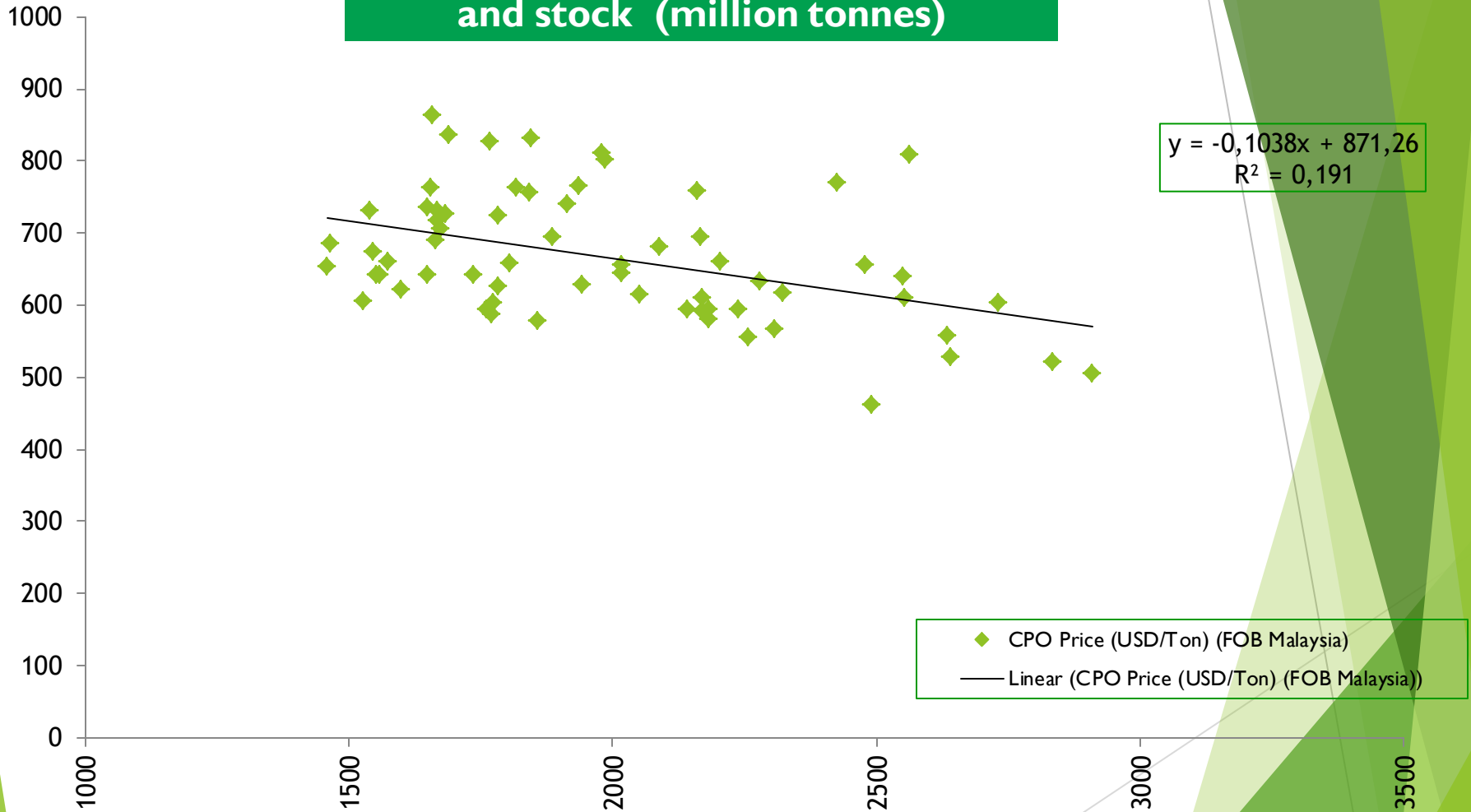
Stock of vegetable oils including palm oil increase

Item	2012/13	2013/14	2014/15	2015/16	2016/17 1/	2017/18 2/
Million Metric Tons						
Ending Stocks						
Coconut	0.46	0.33	0.29	0.38	0.31	0.33
Cottonseed	0.21	0.23	0.22	0.10	0.11	0.15
Olive	0.52	0.64	0.29	0.49	0.28	0.28
Palm	9.24	9.58	10.20	8.69	9.00	11.19
Palm Kernel	0.82	0.93	0.85	0.67	0.78	0.99
Peanut	0.22	0.24	0.15	0.13	0.22	0.16
Rapeseed	4.44	5.54	5.71	5.17	4.21	3.63
Soybean	4.08	3.89	4.31	3.61	3.39	3.14
Sunflowerseed	2.33	2.81	2.41	1.51	1.65	1.35
Total	22.32	24.19	24.44	20.75	19.95	21.21
1/Preliminary. 2/Forecast.						
Source: USDA, Economic Research Service using data from USDA, Foreign Agricultural Service,						
Oilseeds: World Markets and Trade				Last updated: March 30, 2018		

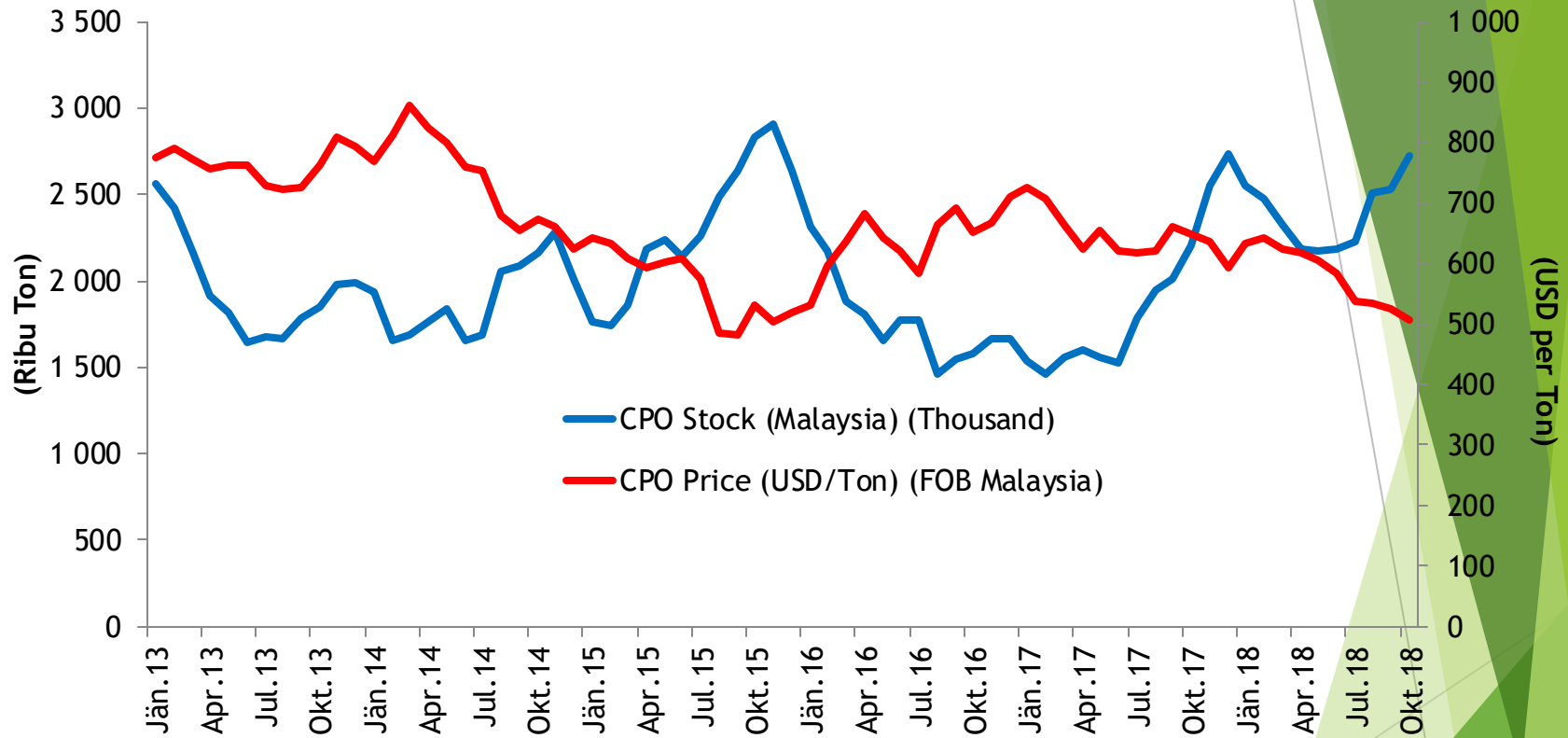
Stock of vegetable oils including palm oil increasing due to high production and in turns, price is declining.

Price of palm oil and Malaysian palm oil stock

**CPO Price (USD/Ton) (FOB Malaysia)
and stock (million tonnes)**

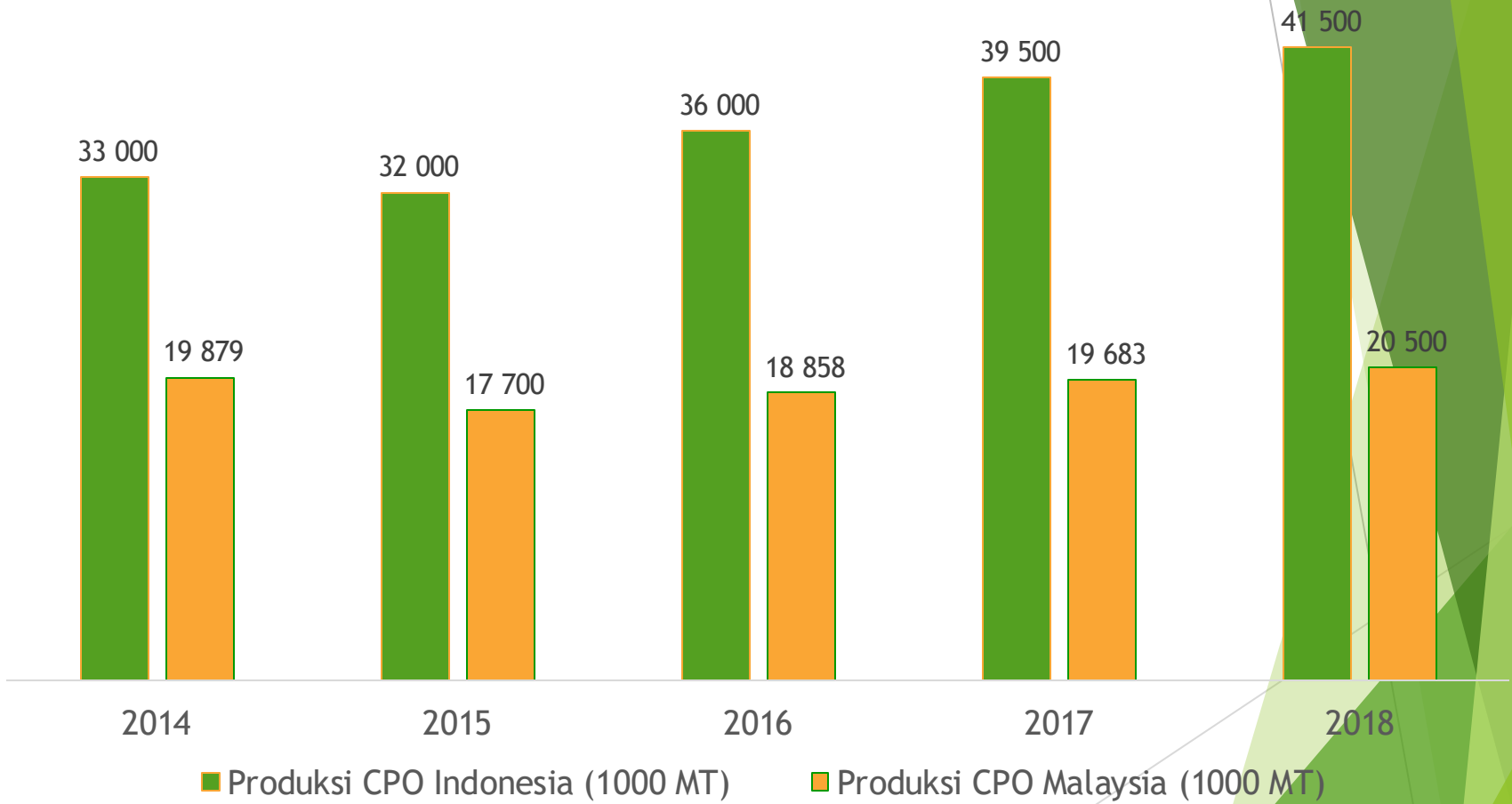


Relationship between Malaysian palm oil stock and price of palm oil



Malaysian palm oil stock increased and caused pressure on palm oil price.

Production increase in malaysia and Indonesia (2014 - 2018)



Factors affecting price of CPO in 2019

1. US-China Trade war. The impacts can be positive or negative on palm oil prices.

2. RED II

The use of palm oil as feedstock for biofuel in EU will be limited before phasing out as palm oil is categorized as having high risk on ILUC.

3. India import tariff reduction

4. Program biofuel di Indonesia dan Malaysia

Implementation of biofuel program in Indonesia and Malaysia runs well.

5. A change in export levy in Indonesia

6. Dynamics of currency movements especially in Brazil and Argentina

7. Dynamics of crude oil prices and its impacts on biofuel program.

Projection of CPO prices

CPO Price Movement



— CPO Price (USD/Ton)

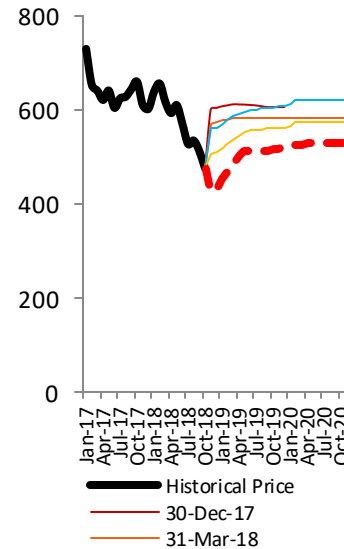
— Arima (5,1,5)

Malaysian Palm Oil Board FOB Spot price

Model	Oct-18	Nov-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	Dec-20
(5,1,5)	496.8	452.7	470.2	507.9	535.8	542.8	563.9	581.3	586.0	590.5	594.7

CPO Price Expectation

Forward Price (USD/Ton)



Consensus Forecast

Forecaster (EOP) (November Forecast)	2018	2019	2020
Intesa Sanpaolo SpA	547.5	502.0	502.0
Fitch Solutions	559.4	573.8	591.7
Capital Economics Ltd	549.0	537.9	573.8
Public Investment Bank Bhd	561.8	573.8	
Consensus Forecast (Median)	554.2	555.8	573.8

Volatility

Year	Average	Standar Deviasi	Coef. of Variation	Min	Max
2013	763.7	30.9	0.04	697.5	831.6
2014	738.3	77.5	0.10	605.4	886.0
2015	564.5	57.3	0.10	424.3	668.1
2016	641.3	52.0	0.08	502.0	739.6
2017	647.7	40.3	0.06	573.0	743.5
2018YTD	569.5	59.9	0.11	418.8	655.4

Estimation of CPO prices in 2019 from some analysts

James Fry (November 2018):

Dynamic of price CPO until June 2019. *EU CPO at \$620; FOB SE Asia \$585; Indonesian internal prices \$555* (with the export levy down \$20 to \$30); and BMD RM2,450 (with 5% Malaysian export tax). After a period of weakness, EU CPKO prices should move up \$50 to \$825.

Thomas Mielke (November 2018):

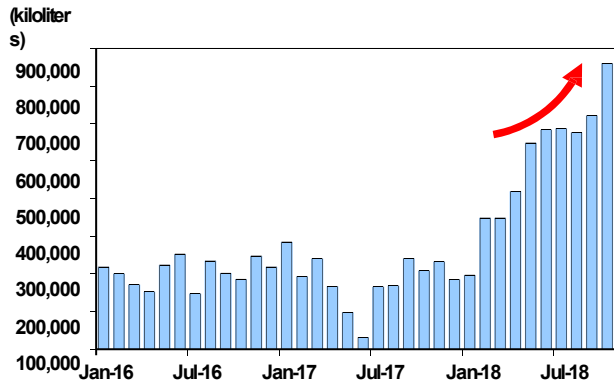
With the following assumption as follows:

- 1) rising demand from the food and energy sector, and
- 2) slowing down of production growth
- 3) world stocks of palm oil and of all oils & fats forecast to decline by 0.8 and 1.6 Mn T, respectively in Jan/Sept 2019.

In the next 9 months price rise of 50-100 \$ in palm & soya oils

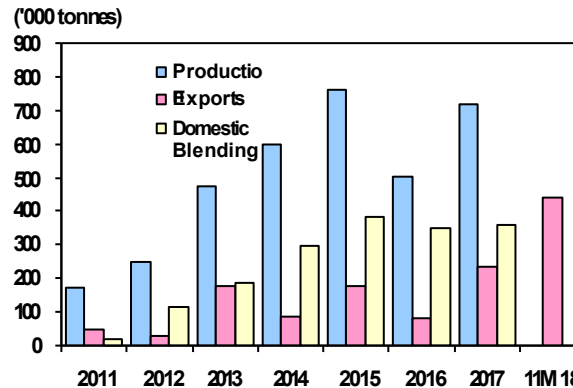
2019: Higher Biodiesel Usage In Indonesia & Malaysia

Indonesia Biodiesel Production



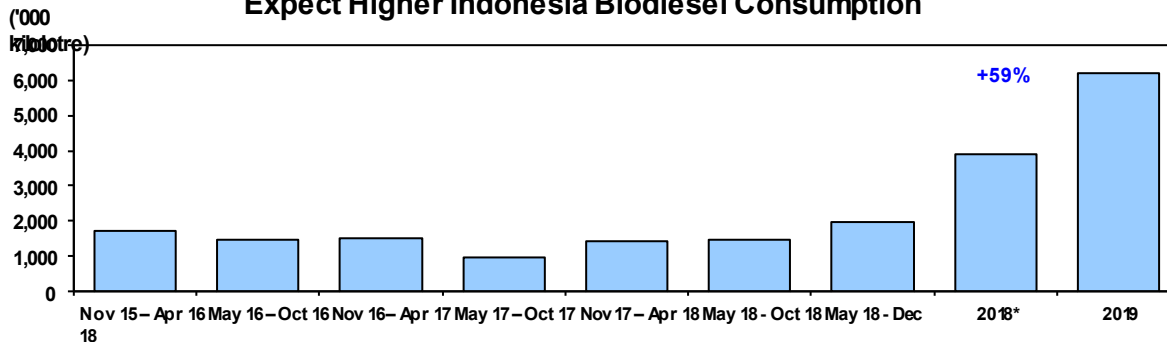
Source: Bloomberg, GAPKI, ESDM

Malaysia Biodiesel Production & Exports



Source: Malaysian Biodiesel Association

Expect Higher Indonesia Biodiesel Consumption



Source: EDSM,

Indonesia biodiesel

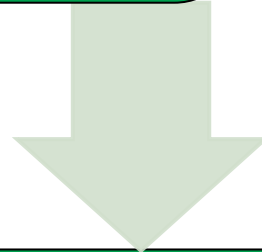
- B20 since 2016 for PSO
- 1 Sep 18: B20 extended to non-PSO
- Penalty: Rp6,000/litre
- Max subsidy for non-PSO : Rp4,000/litre
- Expanded mandate to non- PSO to double blending volume
- **To increase to B30 in 2019?**

Malaysia biodiesel

- To increase to B10 from B7 for transport sector
- To mandate B7 for industrial use
- Expect additional 300,000- 350,000 mt p.a. if fully implemented

Mandatory program of B-30

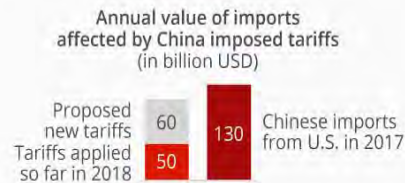
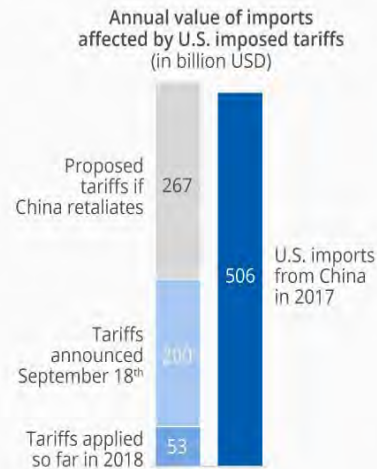
Domestic diesel consumption amount to 32 millions kilolitre per annum.



Program B-30 will reduce diesel consumption by 30% or around 9 millions kilolitre meaning that around 9 millions tonnes of palm oil will be used in domestic markets for biodiesel.

US – China trade war

U.S. – China Trade Tariffs Are Reaching Their Limit



© StatistaCharts Source: US Census Bureau/BBC

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US/Chinese Trade War Escalates

Tariffs imposed in US/China trade war in 2018, by total value of affected imports*

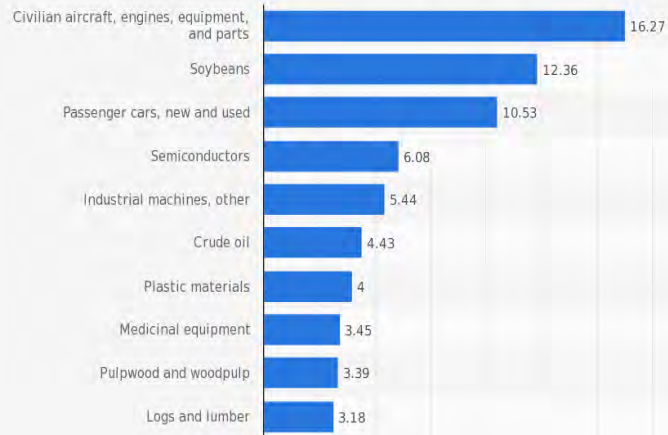


© StatistaCharts * as of August 23, 2018. Sources: Bloomberg, CNN

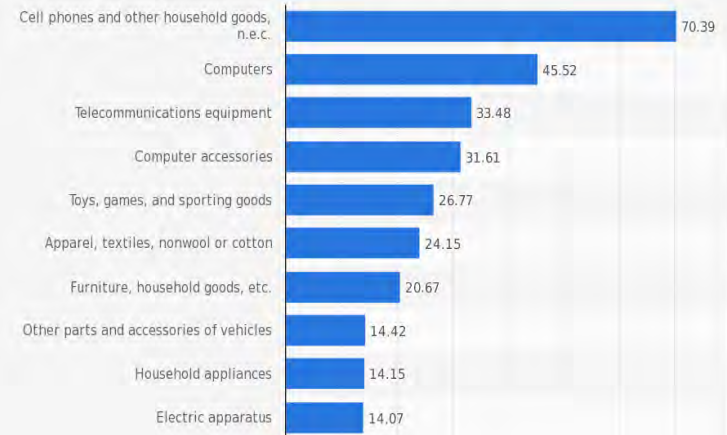
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Trade war US-China

Value of exported goods from the United States to China in 2017, by commodity category (in billion U.S. dollars)



Value of imported goods to the United States from China in 2017, by commodity category (in billion U.S. dollars)



One of the main US commodities exported to China is soybean. The trade war impacts the price of soybean.

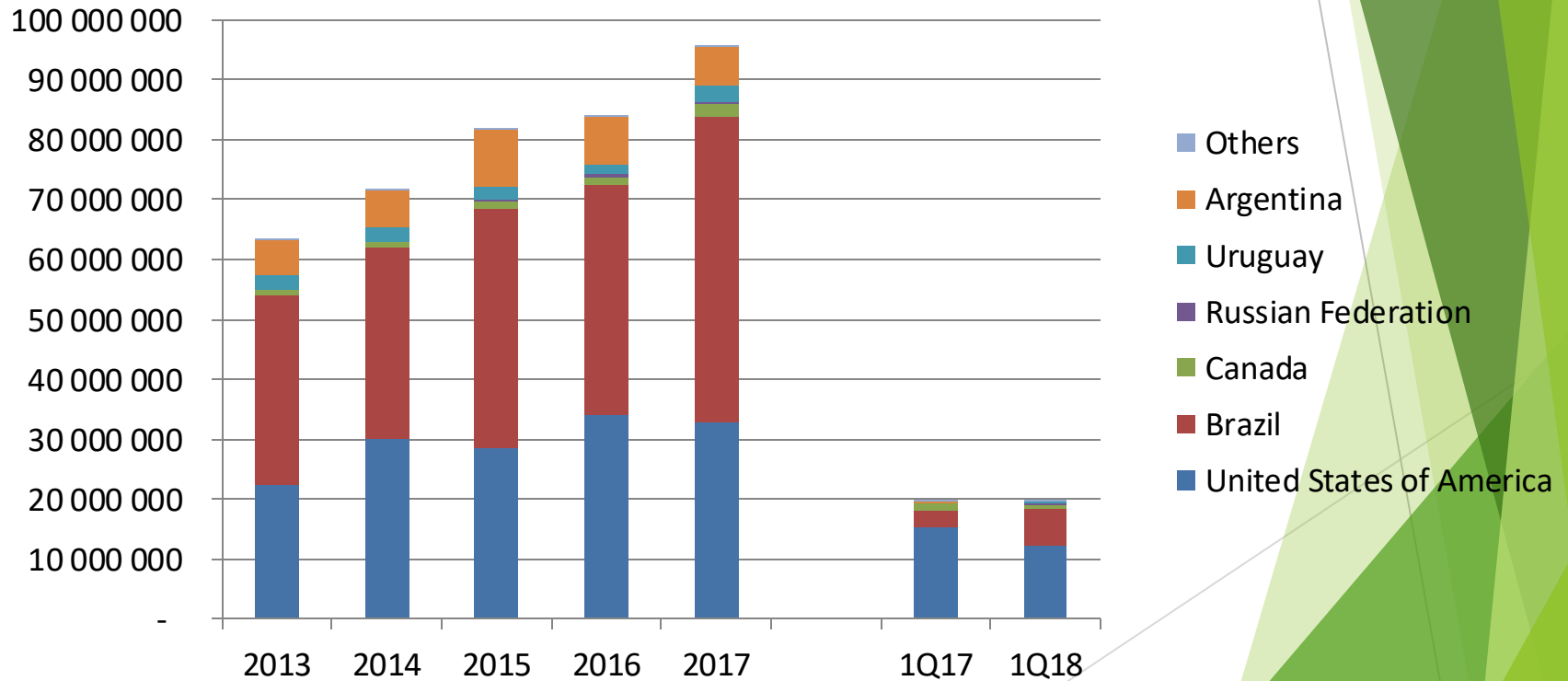
US soybean export to China drop following trade war

US export of soybean to China
(million tonnes)



China import of soybean replaced by Brazil and Argentina

China import of soybean



Conclusion

- I. Price of CPO hit the lowest level in 2018 due the following factors:
 - a. Production is higher than expected, while demand is weak, thus stock is abundant.
 - b. Crude oil prices declining.
 - c. Protective policy by importing countries.
 - d. An increase in soybean production and a decline in its price
 - e. US-China trade war.

2. In 2019, price of palm oil is expected to be increase as production cycle is downtrend, stock lowers, and also due to the declining tariff in India, program biodiesel in Indonesia, and positive impacts on US-China trade war.

THANK YOU